

#### **INFORMATION SHEET**

No. M-02

(Previously numbered MEP-02)

DATE

June 30, 2014

SUBJECT

Mechanical (and Electrical & Plumbing)

TITLE

FAQ on 2013 California Energy Code

**PURPOSE** 

The purpose of this Information Sheet is to provide information for frequently

asked questions based on the 2013 California Energy Code (CEC).

REFERENCE :

2013 California Energy Code

DISCUSSION:

The 2013 California Energy Code (CEC) will take effect on July 1, 2014. A list of frequently asked questions has been compiled to address its implementation. All code sections referenced in this Information Sheet applies to 2013 CEC,

unless noted otherwise.

### Frequently Asked Questions (FAQ):

#### A. Low Rise Residential FAQ:

- 1. When is compliance required for additions and alterations?
  - Details regarding compliance for additions and alterations can be found in Section 150.2.
  - Additions must meet all the same mandatory requirements as new buildings (detailed in Section 150.0), except for the solar ready requirements, with exceptions for some smaller additions as detailed in Section 150.0(a).
     Prescriptive requirements for additions are detailed in Section 150.2(a) 1, while performance requirements are detailed in 150.2(a) 2.
  - In alterations, only the altered components must meet the mandatory requirements, excluding the solar ready requirement. Prescriptive requirements for the altered components are detailed in Section 150.2(b) 1, while performance requirements are detailed in 150.2(b) 2.
  - When performing an addition that is less than 1000 sf, the compliance form CF1R-ADD-01-E will always be required if using the prescriptive method. For additions greater than 1000 sf, the prescriptive form for new buildings, CF1R-NCB-01-E will be required.
  - When performing an alteration that is covered by the energy code, the general alteration compliance form CF1R-ALT-01-E will always be required if using the prescriptive method.
  - When using the performance method for both additions and alterations, the compliance form CF1R-PRF-01-E will always be required.

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- 2. What are the different types of forms, what categories are they divided into in terms of work type, and what is their naming convention?
  - There are three different types of forms for low-rise residential buildings: compliance (CF1R), installation (CF2R), and verification (CF3R).
    - Compliance: Required whenever anything in the scope of work falls under the energy code. To be provided at plan check. Compliance forms are designated CF1R.
    - Installation: Required whenever new equipment that is covered by the standards is installed. Verifies that what has been indicated on the compliance forms has actually been installed.
    - Verification: Required whenever HERS verification is required or chosen to be used by the design professional.
  - Verification and installation forms are divided into four different categories according to work type: 1) envelope, 2) lighting, 3) mechanical, and 4) plumbing.
  - A complete list of all the forms covering low-rise residential work can be found in Appendix A of the Low-Rise Residential Compliance Manual, available on the CEC website at <a href="http://energy.ca.gov/2013publications/CEC-400-2013-001/appendices/Appendix A Compliance Forms List.pdf">http://energy.ca.gov/2013publications/CEC-400-2013-001/appendices/Appendix A Compliance Forms List.pdf</a>
    (Note: DBI staff can access this PDF file at J:/Common/2013 California Energy Code)
- 3. Who is responsible for completing each type of form, and when are they required to be completed?
  - Compliance forms are to be completed by the <u>design professional</u> and are required at <u>plan check</u>. Installation forms are to be completed by the individual in charge of installation (usually the <u>contractor</u>) and are to be provided <u>at inspection</u>. Verification forms are to be completed by a <u>certified HERS rater</u>, and are to be provided at inspection.
- 4. When is HERS verification required?
  - Dependent on the scope of work of a specific project. In general, HERS verification will now be required for most mechanical work in low-rise residential buildings.
    - For an entirely new HVAC system (including new ducts), duct leakage, fan efficacy, and system airflow rate must be verified.
    - Whenever a system has all new ducts (defined as 75% new ducts) being installed, duct leakage and system airflow rate must be verified.
    - Whenever there are 40+ft of new ductwork in unconditioned space, or indirectly conditioned space, only duct leakage must be verified.
    - Whole building mechanical ventilation must be verified when such a system is to be installed.
    - Whenever an HVAC system is claimed on performance documentation to have a higher EER/SEER rating than is required by the prescriptive method, it must be verified.
  - There are also HERS verification forms for envelope and plumbing work, but these forms are only used when claiming certain energy credits for the compliance (for example, quality insulation, air leakage, pipe insulation). They are not necessarily required.

- 5. If architectural plans for a low-rise residential building permit with deferred Mechanical/Electrical/Plumbing (MEP) are submitted prior to July 1, 2014, will the deferred MEP be subject to the 2013 Energy Code?
  - Deferred MEP submittals, with reference to architectural plans submitted prior to July 1, 2014, may use the 2010 California Energy Code.
- 6. Who is responsible for completing the Title 24 (Part 6) Certificates of Installation, Acceptance and Verification? Who determines which certificate is required for my permit application? Will DBI inspectors collect these certificates before the Certificate of Occupancy is issued?
  - The engineers/contractors, state certified energy specialists, and HERS raters respectively are responsible for completing the Certificates of Installation, Acceptance and Verification. The specific certificates required for your permit application will be identified by Engineer/Architect of Record or designer on the Notice, Title-24 Energy Inspection Requirements (Low-rise Residential), which is available as attachments to Information Sheet M-03 (previously MEP-03). These Notices (11x17) shall be affixed to the front of your permit plan set before they are submitted for DBI plan review. Once reviewed and approved by DBI plan checkers, these required energy inspection items will be recorded in DBI's Permit Tracking System (PTS). The respective DBI inspectors will verify these checked energy related items in the field against the checklist on the Notices, but will not collect these certificates during their visits. It is the responsibility of the Engineer/Architect of Record to collect all the completed and signed certificates from the responsible parties, and email them to the DBI Energy Inspection staff at dbi.energyinspections@sfgov.org. Once received by DBI staff, they will be checked off against the list in DBI's PTS database. The final Certificate of Occupancy will not be issued until all required Title-24 energy items are cleared.

## B. Non-Residential, High-Rise Residential, and Hotel/Motel FAQ:

- 1. How are the standards applied in tenant improvements, and what triggers compliance?
  - The standards will apply to TI projects. The manner in which the standards are applied to additions and alterations is outlined in CEC 141.0. There is no trigger point in terms of dollar amount or square footage at which the standards apply.
- 2. When are the various types of forms required, and what compliance forms are brand new?
  - Compliance forms are required <u>at plan check</u>, while installation, acceptance, and verification forms are required to be provided <u>during inspection</u>. Many of the compliance forms are extremely similar to those required under the 2008 standards, but with new names. The familiar categories should be envelope, lighting (indoor, outdoor, and sign), and mechanical. The following types of forms are entirely new with this code cycle:
    - o Electrical: NRCC-ELC-01-E. Required to show compliance with the disaggregation of electrical circuits required. In additions/alterations, this form will only be required if the following electrical elements are moved: service distribution switchboards/panel boards, feeders, and motor control centers/panel boards. In a typical tenant improvement, it is unlikely that this form will be required.

- Plumbing: NRCC-PLB-01-E. Required for new water heating systems.
   This is a new category, but is similar to a current form that is categorized under mechanical.
- 3. The new regulations are enforced in part at the time of plan check and then again during construction and at the end of construction. What is the procedure and to whom are the appropriate documents submitted? Is this something that will be able to be approved in a short period of time or will this cause a delay in the issuance of a permit or the final sign off of a project?
  - Compliance forms are during plan check and are submitted to DBI as usual, while installation, acceptance, and verification forms are to be completed in the field. A DBI Internal Energy Committee has been established to handle the requirements of the new code.
- **4.** In a tenant improvement project, is there a dollar value or a size that triggers commissioning? Is commissioning only for buildings?
  - Per CEC 120.8, and per DBI call to the Energy Commission hotline, commissioning is only required for new buildings. Commissioning is still required per the CA Green Building Code.
- 5. What triggers a Design Review Certificate to be included on the drawings?
  - This is required for all new projects, but is not required for TIs since it is a part of the commissioning requirements.
- 6. When is a Certificate of Compliance, Certificate of Installation, Certificate of Acceptance, and the Certificate of Verification, required? Who is responsible for completing these forms? Where do they go? Must they be submitted to an agency? Which ones and when?
  - Certificates of Compliance: always required at plan check whenever anything
    within the scope of work is subject to the regulations of the energy code. Must be
    completed by the design professional, and submitted to DBI.
  - Certificate of Installation: Required whenever appliances are installed that are subject to the regulations of the energy code. Must be completed by the individual responsible for the installation, normally the contractor.
  - Certificate of Acceptance: Required whenever acceptance testing is required according to the energy code. Must be completed by a certified acceptance tester.
  - Certificate of Verification: Required whenever any work is done that requires HERS verification. Must be completed by a certified HERS rater.
  - Detailed explanations of these different forms can be found in CEC 10-103, which is available in the version of the code found on the CEC website at <a href="http://energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf">http://energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf</a>

(Note: DBI staff can access this pdf file at J:/Common/2013 California Energy Code)

- 7. What are the design review requirements for a design/build project?
  - The design review requirement will apply to any subsystem at the time of submittal for deferred submittal and design/build projects.
  - In terms of design review for design/build projects that do not require commissioning (i.e. not new building), there has been no change to current procedure.

- 8. In a tenant improvement, what is required to meet the insulation requirement? I would assume if we are not on the top floor, there is no requirement for the roof? If we are not on the top floor, is there a requirement to upgrade the exterior wall insulation?
  - In general, there is no requirement for the roof if not on the top floor. The only
    exception would be if the roof is separating conditioned and unconditioned
    space. There is also no requirement to upgrade exterior wall insulation unless the
    scope of work of the project involves altering those walls.
- 9. Are mechanical requirements applied based on the size of the projects?
  - All additions and alterations are required to meet the mandatory requirements for mechanical equipment outlined in CEC 120.1-120.6, with no exceptions for size he project. This is stated in CEC 140.1, for both additions and alterations. However, only the altered components of alterations must meet the standards.
- **10.** How will the lighting controls and lighting power requirements apply to tenant improvement projects?
  - The prescriptive requirements for alterations are given in Table 141.0-E.
    - If less than 10% of the luminaires in an enclosed space are altered, then power density and controls requirements are allowed to remain as they were.
    - If more than or equal to 10% of the luminaires are altered, then they must meet the requirements given in CEC 140.6, and meet the new controls requirements.
    - 1. Exception: If the power density is kept to less than 85% of that allowed in 140.6, then daylighting controls are not required. When they are required, they are also only necessary for altered lighting.
- **11.** Will the requirement for "controlled" and "uncontrolled" outlets double the number of outlets required?
  - According to 130.5(d), one controlled receptacle must be provided for every uncontrolled receptacle. It is not necessarily implied that there must be double the amount of outlets than currently required. In addition, there are several exceptions to this rule.
- **12.** Is DBI going to make available the forms required at the various stages of the projects, similar to how they are making available the DA Checklist or the SF Green Building Sheet and the various other forms required for plan check?
  - See Information Sheet M-03 (previously MEP-03) Title-24 Energy forms for Lowrise Residential Buildings and Information Sheet M-04 (previously MEP-04) Title-24 Energy forms for High-rise Residential and Nonresidential Buildings.
- 13. In a tenant improvement project where an existing space is remodeled and/or enlarged or reduced in size, and some of the existing lighting is intended to remain, do the standards apply only to the new lighting or to all the lighting?
  - The controls and power density standards will apply to the all the lighting in an enclosed area that has more than 10% of its lighting being altered, as seen in Table 141.0-E. However, daylight controls requirements will only apply to the new lighting.
  - Changing the use of a room will also trigger the lighting requirements.
- **14.** Do the air barrier requirements for containment at computer rooms mean the room must have full height walls?
  - According to 140.9(a)6, air barriers must ensure that outlet air from computer exhaust from computers in racks with power exceeding 175kW/room is not able

to return to the computer inlet without first passing through a cooling system. It is not stated that these air barriers are required to be full height walls.

- **15.** If architectural tenant improvement submittals are submitted prior to July 1<sup>,</sup> 2014 and the related MEP tenant improvement is submitted on or after July 1<sup>,</sup> 2014, will the related MEP submittal be subject to the 2013 Energy Code?
  - The related MEP submittals, with reference to architectural plans submitted prior to July 1, 2014, may use the 2010 California Energy Code.
- **16.** Who is responsible for completing the Title 24 (Part 6) Certificates of Installation, Acceptance and Verification? Who determines which certificate is required for my permit application? Will DBI inspectors collect these certificates before the Certificate of Occupancy is issued?
  - The engineers/contractors, state certified energy specialists, and HERS raters respectively are responsible for completing the Certificates of Installation, Acceptance and Verification. The specific certificates required for your permit application will be identified by Engineer/Architect of Record on the Notice, Title-24 Energy Inspection Requirements (high-rise Residential and Non-residential), which is available as attachments to Information Sheet MEP-04. These Notices (11x17) shall be affixed to the front of your permit plan set before they are submitted for DBI plan review. Once reviewed and approved by DBI plan checkers, these required energy inspection items will be recorded in DBI's Permit Tracking System (PTS). The respective DBI inspectors will verify these checked energy related items in the field against the checklist on the Notices, but will not collect these certificates during their visits. It is the responsibility of the Engineer/Architect of Record to collect all the completed and signed certificates from the responsible parties, and email them to the DBI Energy Inspection staff at dbi.energyinspections@sfgov.org. Once received by DBI staff, they will be checked off against the list in DBI's PTS database. The final Certificate of Occupancy will not be issued until all required Title-24 energy items are cleared.

6/30/14

# Effective Date of the Provisions of this Information Sheet

The provisions of this information sheet become effective for building permit applications submitted on or after July 1, 2014.

Tom C. Hui, S.E., C.B.O., Director

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Department of Building Inspection

Date

This Information Sheet is subject to modification at any time. For the most current version, visit our website at http://www.sfdbi.org